

REMARKS

Claims 1-12 are all the claims pending in the application. Claims 11 and 12 have been newly added, and no new matter is added.

I. Specification

The Patent Office indicated that the lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors, and thus requested Applicant's cooperation in correcting any errors of which Applicant is aware of.

Applicant would gladly make any necessary corrections if pointed out by the Patent Office.

II. Claim Rejections - 35 U.S.C. § 102

A. Ishihara: Claims 1-8

The Patent Office rejected claims 1-8 under 35 U.S.C. 102(e) as allegedly being anticipated by Ishihara et al. (US 2003/0048072).

Ishihara fails to teach or suggest at least that a minimum light-emission value is equal to or less than 50% of a maximum light-emission value when white light is emitted, as recited in claim 1. The Patent Office alleged that paragraph [0060] of Ishihara teaches a minimum light-emission of less than 50% of a maximum light-emission value when white light is emitted.

However, paragraph [0060] teaches "when the distance d is equal to or less than $\frac{1}{4}$ the center wavelength of the produced light, the light is not affected by the classic optics. Hence, there is no loss due to total reflection, improving the light extraction efficiency." (Ishihara, paragraph [0060]). In other words, Ishihara's disclosed relationship between distance d and the

center wavelength reduces internal reflection when light is produced in the organic layer and subsequently transmitted into the air. Regarding light-emission, however, Ishihara does not teach or suggest a particular relationship between the minimum and maximum values of emitted white light. Ishihara, including paragraph [0060], is not endeavoring to emit a minimum value of white light that is less than 50% of the maximum value of white light, and therefore Ishihara would not teach or suggest the same.

Since Ishihara does not disclose a specific relationship between maximum and minimum light-emission, even taking the broadest possible reading, Ishihara does not teach or suggest that a minimum light-emission value is equal to or less than 50% of a maximum light-emission value.

Although the Patent Office cited paragraph [0059] as teaching a diffraction grating, the cited paragraph relates to activity in an emitting layer and thus cannot correspond to a diffraction layer disposed on a surface of the light emitter. Moreover, paragraphs [0060] and [0059] in Ishihara disclose specific conditions of the diffusion distance favorable to light emitting property as well as various operations in the light-emitting layer. However, cited paragraphs [0059] and [0060] are unrelated to emitting the white light, to having the minimum light-emission value at the time of emitting white light that is equal to or less than 50% of the maximum light-emission value, and to providing the diffraction grating structure of the light-emitting element, as recited in claim 1.

For at least the reasons discussed above, independent claim 1 is patentable over the applied reference. Accordingly, the 35 U.S.C. § 102 rejection of claim 1 and its dependent claims 2-8 should be withdrawn.

Further, regarding claim 2, Ishihara fails to teach or suggest that a minimum value of a spectral product obtained from a light-emission waveform of the white light emitted from said light-emitting portion and a spectral transmittance of said color-separation filter is equal to or less than 50% of a maximum value. Ishihara utilizes color filters in its organic light emitting device, but Ishihara provides no teaching or suggestion of the features recited in claim 2. Therefore, the § 102 rejection of claim 2 should be withdrawn for this reason too.

B. Shirasaki: Claims 1-8

The Patent Office rejected claims 1-8 under 35 U.S.C. 102(b) as allegedly being anticipate by Shirasaki et al. (USPN 6,025,894). As reference to paragraph numbers in the Office Action have been made, when only columns and line numbers are listed in the patent, Applicant makes reference only to columns and line numbers when discussing the reference.

Shirasaki fails to teach or suggest at least that a minimum light-emission value is equal to or less than 50% of a maximum light-emission value when white light is emitted, as recited in claim 1. Applicant submits that the Patent Office has not met its burden of evidencing how this feature is met in the applied reference, and indeed, this feature is not disclosed in the applied reference.

Shirasaki depicts a^*-b^* chromaticity diagrams, in Figs. 15, 19, 21, and 23, showing a change in the display color of display apparatus 11 in the initial state when no voltage is applied, and in the states when voltage is applied. Referencing the a^*-b^* chromaticity diagrams with purple (P), red (R), green (G), blue (B), black, and white colors, the respective columns (col. 22, lines 28-47; col. 26, lines 10-27; col. 27, lines 24-36; col. 28, lines 39-56) describe the ratio of

outgoing light to incident light at a minimum voltage and at 5 and 7 volts. However, Shirasaki does not teach or suggest a minimum light-emission value for outgoing white light that is 50% or less than a maximum value for outgoing white light.

Further, the identified claim feature is not disclosed in Fig. 39, which shows the ratio of outgoing light to incident light at different voltages for red, green, yellow, blue, black, and white. (Shirasaki, col. 3, lines 58-62). It cannot be said that Fig. 39, of Shirasaki, teaches or suggests that a minimum value of white is equal to or less than 50% of a maximum value of white.

Additionally, Figs. 28 and 29 of Shirasaki illustrate a structural element with a reference number 120 to show a scatter control member comprising a plurality of light guiding portions 121 of a prism form arranged in parallel to one another and the reflection films 122 each intervened between the adjoining light guiding portions 121. This structural element 120 fails to teach or suggest a diffraction grating structure provided to a light-emitting side surface of the light-emitting portion, as recited in claim 1.

For at least the foregoing reasons, independent claim 1 is not anticipated by the reference. Accordingly, the 35 U.S.C. § 102 rejection of claim 1 and its dependent claims 2-8 should be withdrawn.

Further, regarding claim 2, Shirasaki fails to teach or suggest that a minimum value of a spectral product obtained from a light-emission waveform of the white light emitted from the light-emitting portion and a spectral transmittance of the color-separation filter that is equal to or less than 50% of a maximum value. Shirasaki does not teach or suggest that it utilizes color

filters to meet the unique features recited in claim 2, and thus, claim 2 is patentable for these reasons as well.

III. Claim Rejections - 35 U.S.C. § 103

A. Kobori and ODA: Claims 1-10

The Patent Office rejected claims 1-10 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kobori (USPN 6,327,554) in view of ODA et al. (US 2002/0180348). Although the Patent Office cites to paragraphs, there are no such paragraph numbers in Kobori. Applicant references columns and line numbers.

Kobori fails to teach or suggest at least that a minimum light-emission value is equal to or less than 50% of a maximum light-emission value when white light is emitted, as recited in claim 1. Kobori teaches that “an electron injecting electrode having a reflectance of at least 50% in a wavelength region of 300 to 700 nm.” (Kobori, col. 8, lines 23-25).

In Kobori, the at least 50% reflectance of the electron ejecting electrode is to augment the light emitted from the organic light emitting device. However, the electron ejecting electrode is not emitting light itself that is a minimum light-emission value equal to or less than 50% of a maximum light-emission value when white light is emitted. That is, the 50% reflectance of the electron ejecting electrode is 50% of the total incident light upon the electron ejecting electrode. Thus, in Kobori, the 50% reflectance is not 50% light-emission of a maximum light-emission for white light, as recited in claim 1, and the 50% reflectance is completely unrelated to the identified feature in claim 1.

ODA is applied for its teaching regarding a diffraction grating element, but it does not compensate for the deficiencies of Kobori. As well, the diffraction grating element in ODA fails to teach or suggest a diffraction grating structure provided to a light-emitting side surface of the light-emitting portion, as recited in claim 1.

For at least the foregoing reasons, the subject matter of independent claim 1 is not rendered obvious by the combined teachings of Kobori and ODA. Accordingly, the 35 U.S.C. § 103 rejection of claim 1 and its dependent claims 1-10.

Furthermore, the 50% reflectance, in Kobori, is not the same as a minimum value of a spectral product, of a light-emission waveform of the white light emitted from the light-emitting portion and a spectral transmittance of the color-separation filter that is equal to or less than 50% of a maximum value, as recited in claim 2. In Kobori, it is a 50% reflectance of the maximum incident light upon the electron ejecting electrode. Therefore, claim 2 is patentable for this reasons too.

B. Ishihara: Claims 9 and 10

The Patent Office rejected claims 9 and 10 under 35 U.S.C. 103(a) as allegedly being unpatentable over Ishihara et al. (US 2003/0048072). Since Ishihara fails to teach or suggest the subject matter of base claim 1, claims 9 and 10 are patentable by virtue of their dependency.

C. Shirasaki: Claims 9 and 10

Also, the Patent Office rejected claims 9 and 10 under 35 U.S.C. 103(a) as allegedly being unpatentable over Shirasaki et al. (USPN 6,025,894). Since Shirasaki fails to teach or

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suggest the subject matter of base claim 1, claims 9 and 10 are patentable by virtue of their dependency.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


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